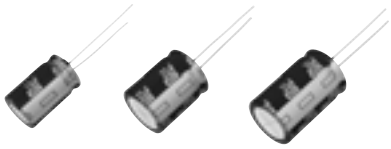
Radial Lead Type

Series: **EE** Type: **A**



■ Features

- High ripple current (at high frequency): 40 % higher than ED Series
- Endurance: 105 °C 8000 h to 10000 h
- RoHS directive compliant

■ Specifications

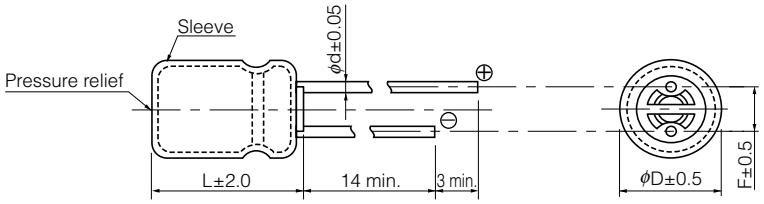
Category Temp. Range	–25 °C to + 105 °C							
Rated W.V. Range	160 V .DC to 450 V .DC							
Nominal Cap. Range	10 µF to 330 µF							
Capacitance Tolerance	±20 % (120 Hz/+20 °C)							
DC Leakage Current	I ≦ 0.06 CV +10 (µA) After 2 minutes							
tan δ	W.V.	160	200	250	350	400	450	(120 Hz/+20 °C)
	tan δ	0.15	0.15	0.15	0.20	0.24	0.24	
Endurance	After following life test with DC voltage and +105 °C±2 °C ripple current value applied (The sum of DC and ripple peak voltage shall not exceed the rated working voltage), when the capacitors are restored to 20 °C, the capacitors shall meet the limits specified below. Duration ϕ10 : 8000 hours ϕ12.5 to ϕ18 : 10000 hours							
	Capacitance change	±20 % of initial measured value						
	tan δ	≦ 200 % of initial specified value						
	DC leakage current	≦ initial specified value						
Shelf Life	After storage for 1000 hours at +105 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)							

■ Frequency correction factor for ripple current

W. V. (V. DC)	Cap. (µF)	Frequency (Hz)					
		60 ≦	120 ≦	300 ≦	1 k ≦	10 k ≦	100 k ≦
160 to 450	10 to 82	0.25	0.35	0.50	0.65	0.90	1.00
	100 to 330	0.30	0.40	0.55	0.70	0.90	1.00

■ Dimensions in mm (not to scale)

(Unit : mm)



Body Dia. ϕD	10	12.5	16	18
Lead Dia. ϕd	0.6	0.6	0.8	0.8
Lead space F	5.0	5.0	7.5	7.5

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02 May. 2014

■ Case size/Ripple current

Cap. (μF)	160 V			200 V		
	Case size (φD×L)	Ripple current (mA r.m.s.) 105 °C		Case size (φD×L)	Ripple current (mA r.m.s.) 105 °C	
		120 Hz	100 kHz		120 Hz	100 kHz
22	10 × 20	245	700	10 × 20	300	850
33	10 × 20	280	810	10 × 20	320	920
47	10 × 20	370	1065	12.5 × 20	385	1100
68	12.5 × 20	470	1350	12.5 × 25 16 × 20S	465 465	1330 1330
82	12.5 × 25	520	1480	16 × 20S	510	1460
100	12.5 × 25 16 × 20S	660 680	1660 1700	16 × 25 18 × 20S	690 670	1730 1665
150	16 × 25 18 × 20S	755 730	1890 1820	16 × 25	740	1860
220	16 × 31.5 18 × 25S	910 780	2280 1950	18 × 31.5	1175	2600
330	18 × 31.5	1040	2600	18 × 40	1250	3120

Cap. (μF)	250 V			350 V		
	Case size (φD×L)	Ripple current (mA r.m.s.) 105 °C		Case size (φD×L)	Ripple current (mA r.m.s.) 105 °C	
		120 Hz	100 kHz		120 Hz	100 kHz
15				10 × 20	170	480
22	10 × 20	275	785	12.5 × 20	230	660
33	12.5 × 20	350	995	12.5 × 25 16 × 20S	275 315	790 900
47	12.5 × 25 16 × 20S	450 490	1290 1400	16 × 25 18 × 20S	375 375	1070 1070
68	16 × 20S	490	1400	16 × 31.5 18 × 25S	535 465	1530 1330
82	16 × 25 18 × 20S	590 590	1680 1680	18 × 25S	535	1530
100	16 × 31.5 18 × 25S	840 840	2100 2100	18 × 31.5	640	1600
150	18 × 31.5	1010	2520			
220	18 × 40	1175	2940			

Cap. (μF)	400 V			450 V		
	Case size (φD×L)	Ripple current (mA r.m.s.) 105 °C		Case size (φD×L)	Ripple current (mA r.m.s.) 105 °C	
		120 Hz	100 kHz		120 Hz	100 kHz
10	10 × 20	150	430	10 × 20U 12.5 × 20	115 170	330 490
15	12.5 × 20	205	590	12.5 × 25	270	780
22	12.5 × 25 16 × 20S	265 300	760 860	16 × 20S	330	945
33	16 × 20S	355	1020	16 × 25 18 × 20S	350 350	1000 1000
47	16 × 25 18 × 20S	410 410	1180 1180	16 × 31.5 18 × 25S	420 420	1200 1200
56				18 × 31.5	480	1380
68	18 × 25	515	1470	18 × 40	630	1800
82	18 × 31.5	575	1645			
100	18 × 40	825	2060			

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■ Standard Products

Endurance : 105 °C ϕ10=8000 h, ϕ12.5 to ϕ18=10000 h

W.V.	Cap. (±20 %)	Case size		Specification			Lead Length			Part No.	Min. Packaging Q'ty	
		Dia.	Length	Ripple Current (100 kHz) (+105 °C)	tan δ (120 Hz) (+20 °C)	Endurance	Lead Dia.	Lead Space			Straight Leads	Taping
								Straight	Taping ✻B			
(V)	(μF)	(mm)	(mm)	(mA r.m.s.)		(hours)	(mm)	(mm)	(mm)		(pcs)	(pcs)
160	22	10	20	700	0.15	8000	0.6	5.0	5.0	EEUEE2C220( )	200	500
	33	10	20	810	0.15	8000	0.6	5.0	5.0	EEUEE2C330( )	200	500
	47	10	20	1065	0.15	8000	0.6	5.0	5.0	EEUEE2C470( )	200	500
	68	12.5	20	1350	0.15	10000	0.6	5.0	5.0	EEUEE2C680( )	200	500
	82	12.5	25	1480	0.15	10000	0.6	5.0	5.0	EEUEE2C820( )	200	500
	100	12.5	25	1660	0.15	10000	0.6	5.0	5.0	EEUEE2C101( )	200	500
		16	20	1700	0.15	10000	0.8	7.5	7.5	EEUEE2C101S( )	100	250
	150	16	25	1890	0.15	10000	0.8	7.5	7.5	EEUEE2C151( )	100	250
		18	20	1820	0.15	10000	0.8	7.5	7.5	EEUEE2C151S( )	100	250
	220	16	31.5	2280	0.15	10000	0.8	7.5		EEUEE2C221	100	
		18	25	1950	0.15	10000	0.8	7.5	7.5	EEUEE2C221S( )	100	250
	330	18	31.5	2600	0.15	10000	0.8	7.5		EEUEE2C331	50	
200	22	10	20	850	0.15	8000	0.6	5.0	5.0	EEUEE2D220( )	200	500
	33	10	20	920	0.15	8000	0.6	5.0	5.0	EEUEE2D330( )	200	500
	47	12.5	20	1100	0.15	10000	0.6	5.0	5.0	EEUEE2D470( )	200	500
	68	12.5	25	1330	0.15	10000	0.6	5.0	5.0	EEUEE2D680( )	200	500
		16	20	1330	0.15	10000	0.8	7.5	7.5	EEUEE2D680S( )	100	250
	82	16	20	1460	0.15	10000	0.8	7.5	7.5	EEUEE2D820S( )	100	250
	100	16	25	1730	0.15	10000	0.8	7.5	7.5	EEUEE2D101( )	100	250
		18	20	1665	0.15	10000	0.8	7.5	7.5	EEUEE2D101S( )	100	250
	150	16	25	1860	0.15	10000	0.8	7.5	7.5	EEUEE2D151( )	100	250
	220	18	31.5	2600	0.15	10000	0.8	7.5		EEUEE2D221	50	
	330	18	40	3120	0.15	10000	0.8	7.5		EEUEE2D331	50	
250	22	10	20	785	0.15	8000	0.6	5.0	5.0	EEUEE2E220( )	200	500
	33	12.5	20	995	0.15	10000	0.6	5.0	5.0	EEUEE2E330( )	200	500
	47	12.5	25	1290	0.15	10000	0.6	5.0	5.0	EEUEE2E470( )	200	500
		16	20	1400	0.15	10000	0.8	7.5	7.5	EEUEE2E470S( )	100	250
	68	16	20	1400	0.15	10000	0.8	7.5	7.5	EEUEE2E680S( )	100	250
	82	16	25	1680	0.15	10000	0.8	7.5	7.5	EEUEE2E820( )	100	250
		18	20	1680	0.15	10000	0.8	7.5	7.5	EEUEE2E820S( )	100	250
	100	16	31.5	2100	0.15	10000	0.8	7.5		EEUEE2E101	100	
		18	25	2100	0.15	10000	0.8	7.5	7.5	EEUEE2E101S( )	100	250
	150	18	31.5	2520	0.15	10000	0.8	7.5		EEUEE2E151	50	
	220	18	40	2940	0.15	10000	0.8	7.5		EEUEE2E221	50	
350	15	10	20	480	0.20	8000	0.6	5.0	5.0	EEUEE2V150( )	200	500
	22	12.5	20	660	0.20	10000	0.6	5.0	5.0	EEUEE2V220( )	200	500
	33	12.5	25	790	0.20	10000	0.6	5.0	5.0	EEUEE2V330( )	200	500
		16	20	900	0.20	10000	0.8	7.5	7.5	EEUEE2V330S( )	100	250
	47	16	25	1070	0.20	10000	0.8	7.5	7.5	EEUEE2V470( )	100	250
		18	20	1070	0.20	10000	0.8	7.5	7.5	EEUEE2V470S( )	100	250
	68	16	31.5	1530	0.20	10000	0.8	7.5		EEUEE2V680	100	
		18	25	1330	0.20	10000	0.8	7.5	7.5	EEUEE2V680S( )	100	250
	82	18	25	1530	0.20	10000	0.8	7.5	7.5	EEUEE2V820S( )	100	250
	100	18	31.5	1600	0.20	10000	0.8	7.5		EEUEE2V101	50	

· When requesting taped product, please put the letter "B" between the "( )". Lead wire pitch ✻B=5 mm, 7.5 mm.
· Please refer to the page of “Taping Dimensions”.

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■ Standard Products

Endurance : 105 °C ϕ10=8000 h, ϕ12.5 to ϕ18=10000 h

W.V.	Cap. (±20 %)	Case size		Specification			Lead Length			Part No.	Min. Packaging Q'ty	
		Dia.	Length	Ripple Current (100 kHz) (+105 °C)	tan δ (120 Hz) (+20 °C)	Endurance	Lead Dia.	Lead Space			Straight Leads	Taping
								Straight	Taping ✻B			
(V)	(μF)	(mm)	(mm)	(mA r.m.s.)		(hours)	(mm)	(mm)	(mm)		(pcs)	(pcs)
400	10	10	20	430	0.24	8000	0.6	5.0	5.0	EEUEE2G100( )	200	500
	15	12.5	20	590	0.24	10000	0.6	5.0	5.0	EEUEE2G150( )	200	500
	22	12.5	25	760	0.24	10000	0.6	5.0	5.0	EEUEE2G220( )	200	500
		16	20	860	0.24	10000	0.8	7.5	7.5	EEUEE2G220S( )	100	250
	33	16	20	1020	0.24	10000	0.8	7.5	7.5	EEUEE2G330S( )	100	250
	47	16	25	1180	0.24	10000	0.8	7.5	7.5	EEUEE2G470( )	100	250
		18	20	1180	0.24	10000	0.8	7.5	7.5	EEUEE2G470S( )	100	250
	68	18	25	1470	0.24	10000	0.8	7.5	7.5	EEUEE2G680( )	100	250
	82	18	31.5	1645	0.24	10000	0.8	7.5		EEUEE2G820	50	
	100	18	40	2060	0.24	10000	0.8	7.5		EEUEE2G101	50	
450	10	10	20	330	0.24	8000	0.6	5.0	5.0	EEUEE2W100U( )	200	500
		12.5	20	490	0.24	10000	0.6	5.0	5.0	EEUEE2W100( )	200	500
	15	12.5	25	780	0.24	10000	0.6	5.0	5.0	EEUEE2W150( )	200	500
	22	16	20	945	0.24	10000	0.8	7.5	7.5	EEUEE2W220S( )	100	250
	33	16	25	1000	0.24	10000	0.8	7.5	7.5	EEUEE2W330( )	100	250
		18	20	1000	0.24	10000	0.8	7.5	7.5	EEUEE2W330S( )	100	250
	47	16	31.5	1200	0.24	10000	0.8	7.5		EEUEE2W470	100	
		18	25	1200	0.24	10000	0.8	7.5	7.5	EEUEE2W470S( )	100	250
	56	18	31.5	1380	0.24	10000	0.8	7.5		EEUEE2W560	50	
	68	18	40	1800	0.24	10000	0.8	7.5		EEUEE2W680	50	

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